40. (New) The catalyst system of claim 34 wherein the heteroatom ligand group J element is nitrogen.

41. (New) The catalyst system of claim 34 wherein the mole ratio of Al:M is from 10:1 to 20,000:1.

42. (New) The catalyst system of claim 34 wherein x is 0 or 1.

REMARKS

Entry of the foregoing amendment and reconsideration of the instant application is respectfully requested.

New, clearer, copies of Tables 1 and 2 have been submitted. Claims 18-33, 35 and 36 have been canceled. Claim 34 was allowed. New dependent claims 37-42 are fully supported by the specification.

Applicant respectfully submits that all pending claims are in condition for allowance. Applicant invites the Examiner to telephone the undersigned attorney if there are any issues outstanding which have not been presented to the Examiner's satisfaction.

Respectfully submitted,

7/1/04
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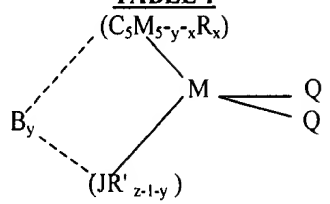
TABLE 1



B (when y =1)	$(C_5M_{5-y-x}R_x)$	(JR'_{z-1-y})	Q	M
dimethylsilyl	cyclopentadienyl	t-butylamido	hydride	zirconium
diethylsilyl	methylcyclopentadienyl	phenylamido	chloro	hafnium
di-n-propylsilyl	1,2-dimethylcyclopentadienyl	p-n-butylphenylamido	methyl	titanium
diisopropylsilyl	1,3- dimethylcyclopentadienyl	cyclohexylamido	ethyl	
di-n-butylsilyl	indenyl	perflurophenylamido	phenyl	
di-t-butylsilyl	1,2-diethylcyclopentadienyl	n- butylamido	fluoro	
di-n-hexylsilyl	tetramethylcyclopentadienyl	methylamido	bromo	
methylphenylsilyl	ethylcyclopentadienyl	ethylamido	iodo	
ethylmethylsilyl	n-butylcyclopentadienyl	n-propylamido	n-propyl	
diphenylsilyl	cyclohexylmethylcyclopentadienyl	isopropylamido	isopropyl	
di(p-t-butylphenethylsilyl)	n-octylcyclopentadienyl	benzylamido	n-butyl	
n-hexylmethylsilyl	β-phenylpropylcyclopentadienyl	t- butylphospheido	amyl	
cyclopentamethylenesilyl	tetrahydroindenyl	ethylphosphido	isoamyl	
cyclotetramethylenesilyl	propylcyclopentadienyl	phenylphosphido	hexyl	
cyclotrimethylenesilyl	t-butylcyclopentadienyl	cyclohexylphosphido	isobutyl	
dimethylgermanyl	benzylcyclopentadienyl	oxo (when y = 1)	heptyl	
diethylgermanyl	diphenylmethylcyclopentadienyl	sulfido (when y = 1)	octyl	
phenylamido	trimethylgermylcyclopentadienyl	methoxide (when y = 0)	nonyl	
t-butylamido	trimethylstannylcyclopentadienyl	ethoxide (when y = 0)	decyl	
methylamido	triethylplumbylcyclopentadienyl	methylthio (when y = 0)	cetyl	
t- butylphosphido	trifluromethylcyclopentadienyl	ethylthio (when y = 0)	methoxy	
ethylphosphido	trimethylsilylcyclopentadienyl		ethoxy	
phenylphosphido	pentamethylcycloopentadienyl (when y = 0)		propoxy	
methylene	fluorenyl		butoxy	
dimethylmethylene	octahydrofluorenyl		phenoxy	
diethylmethylene			dimethylamido	
ethylene			diethylamido	
dimethylethylene			methylethylamido	
diethylethylene			di-t-butylamido	
dipropylethylene			diphenylamido	
propylene			diphenylphosphido	
dimethylpropylene			dicyclohexylphosphido	
diethylpropylene			dimethylphosphido	
1,1-dimethyl-3,3,-dimethylpropylene			methylidene (both Q)	
tetramethyldisilexene			ethylidene (both Q)	
1,1,4,4- tetramethylidisilylethylene			propylidene (both Q)	
			ethyleneglycol dianion	

TABLE 2

EXP.	DILUENT		TRANSITION METAL COMPOUND (TMC)		ALUMOXANE		mmole MAO:TMC	CO-		RXN TEMP.	RXN TIME	YIELD			SCB/ 1000 C		CAT. ACTIVITY G. POLYMER/MMOLE
NO.	Type	ml	Type	mmole	Type	mmole	($\times 10^3$)	MONOMER	MONOMER	° C.	HR.	g.	MW	MWD	NMR	IR	TMC-MOLE
4	Hexane	300	A	5.588×10^{-4}	MAO	9	16.11	ethylene-60 psi		80	0.5	5.4	212,600	2.849			1.933×10^4
1	Toluene	400	A	5.588×10^{-4}	MAO	9	16.11	ethylene-60 psi		80	0.5	9.2	257,200	2.275			3.293×10^4
2	Toluene	300	A	2.794×10^{-4}	MAO	4.5	16.11	ethylene-60 psi		80	0.5	3.8	359,800	2.425			2.720×10^4
3	Toluene	300	A	2.794×10^{-4}	MAO	4.5	16.11	ethylene-60 psi		40	0.5	2.4	635,000	3.445			1.718×10^4
16	Toluene	400	A	5.588×10^{-4}	MAO	5	8.95	ethylene-400 psi		80	0.5	19.4	343,700	3.674			6.943×10^4
12	Toluene	400	A[a]	5.588×10^{-4}	MAO	5.02	8.98	ethylene-60 psi		80	0.5	3.4	285,000	2.806			1.217×10^4
13	Toluene	400	A[a,b]	5.588×10^{-4}	MAO	5.02	8.98	ethylene-60 psi		80	0.5	2.0	260,700	2.738			7.158×10^3
14	Toluene	400	A[a]	5.588×10^{-4}	MAO	0.25	0.47	ethylene-60 psi		80	0.5	1.1	479,600	3.130			3.937×10^3
15	Toluene	400	A[a]	5.588×10^{-4}	MAO	0.1	0.018	ethylene-60 psi		80	0.5	1.6	458,800	2.037			5.727×10^2
18	Toluene	400	B	5.573×10^{-4}	MAO	5	8.97	ethylene-60 psi		80	0.17	9.6	241,200	2.628			1.034×10^5
19	Toluene	300	C	1.118×10^{-3}	MAO	4	3.58	ethylene-60 psi		80	0.5	1.1	278,400	2.142			3.041×10^3
20	Toluene	400	D	5.573×10^{-4}	MAO	5	8.97	ethylene-60 psi		80	0.5	1.9	229,700	2.618			6.819×10^3
21	Hexane	300	E	5.61×10^{-4}	MAO	9	16.04	ethylene-60 psi		80	0.5	2.2	258,200	2.348			7.843×10^3
23	Toluene	400	F	4.79×10^{-4}	MAO	5	10.44	ethylene-60 psi		80	0.5	5.3	319,900	2.477			2.213×10^4
25	Toluene	400	G	5.22×10^{-4}	MAO	5	9.58	ethylene-60 psi		80	0.5	3.5	237,300	2.549			1.341×10^4
27	Toluene	400	H	5.62×10^{-4}	MAO	5	8.90	ethylene-60 psi		80	0.5	11.1	299,800	2.569			3.950×10^4
29	Toluene	400	I	5.57×10^{-4}	MAO	5	8.98	ethylene-60 psi		80	0.5	0.9	377,000	1.996			3.232×10^3
30	Toluene	400	J	5.59×10^{-4}	MAO	5	8.94	ethylene-60 psi		80	0.5	8.6	321,000	2.803			3.077×10^4
32	Toluene	300	K	5.06×10^{-4}	MAO	5	9.87	ethylene-60 psi		80	0.5	26.6	187,300	2.401			1.051×10^5
34	Toluene	400	L	5.60×10^{-4}	MAO	5	8.93	ethylene-60 psi		80	0.5	15.5	174,300	2.193			5.536×10^4
5	Toluene	300	A	1.118×10^{-3}	MAO	9	8.05	ethylene-60 psi	propylene-200 ml	80	0.5	13.3	24,900	2.027		73.5	2.379×10^4
6	Toluene	200	A	2.235×10^{-3}	MAO	9	4.03	ethylene-60 psi	propylene-200 ml	50	0.5	6.0	83,100	2.370		75.7	5.369×10^3
7	Toluene	150	A	5.588×10^{-3}	MAO	9	1.61	ethylene-65 psi	1-butene-100 ml	50	0.5	25.4	184,500	3.424	23.5	21.5	9.091×10^3

TABLE 2-continued

EXP.	DILUENT		TRANSITION METAL COMPOUND (TMC)		ALUMOXANE		mmole MAO:TMC	CO-		RXN TEMP.	RXN TIME	YIELD			SCB/ 1000 C		CAT. ACTIVITY G. POLYMER/MMOLE
NO.	Type	ml	Type	mmole	Type	mmole	($\times 10^3$)	MONOMER	MONOMER	° C.	HR.	g.	MW	MWD	NMR	IR	TMC-MOLE
8	Toluene	100	A	5.588×10^{-3}	MAO	9	1.61	ethylene-65 psi	1-butene-150 ml	50	0.5	30.2	143,400	3.097	30.8	26.5	1.081×10^4
9	Toluene	200	A	5.588×10^{-3}	MAO	8	1.43	ethylene-65 psi	1-butene-50 ml	50	0.5	24.9	163,200	3.290	23.3	18.9	8.912×10^3
10	Hexane	200	A	5.588×10^{-3}	MAO	8	1.43	ethylene-65 psi	1-butene-50 ml	50	0.5	19.5	150,600	3.510	12.1	12.7	6.979×10^3
11	Hexane	150	A	5.588×10^{-3}	MAO	8	1.43	ethylene-65 psi	1-butene-100 ml	50	0.5	16.0	116,200	3.158	19.2	19.4	5.727×10^3
22	Toluene	200	E	5.61×10^{-3}	MAO	9	1.60	ethylene-65 psi	1-butene-100 ml	50	0.5	1.8	323,600	2.463		33.5	6.417×10^2
24	Toluene	150	F	4.79×10^{-3}	MAO	9	1.88	ethylene-65 psi	1-butene-100 ml	50	0.5	3.5	251,300	3.341		33.3	1.461×10^3
26	Toluene	150	G	5.22×10^{-3}	MAO	7	1.34	ethylene-65 psi	1-butene-100 ml	50	0.5	7.0	425,000	2.816		27.1	2.682×10^3
28	Toluene	150	H	5.62×10^{-3}	MAO	7	1.25	ethylene-65 psi	1-butene-100 ml	50	0.5	15.4	286,600	2.980		45.4	5.480×10^3
30	Toluene	150	J	5.59×10^{-3}	MAO	7	1.25	ethylene-65 psi	1-butene-100 ml	50	0.5	11.2	224,800	2.512		49.6	4.007×10^3
32	Toluene	150	K	5.06×10^{-3}	MAO	7	1.38	ethylene-65 psi	1-butene-100 ml	50	0.5	3.9	207,600	2.394		33.9	1.542×10^3
35	Toluene	250	A	5.588×10^{-3}	MAO	7	1.25	ethylene-65 psi	1-hexene-100 ml	50	0.5	26.5	222,800	3.373		39.1	9.485×10^3
36	Toluene	300	A	5.588×10^{-3}	MAO	7	1.25	ethylene-65 psi	1-octene-150 ml	50	0.5	19.7	548,600	3.007		16.5	6.979×10^3
37	Toluene	300	A	5.588×10^{-3}	MAO	7	1.25	ethylene-65 psi	4-methyl-1-pentene-100 ml	50	0.5	15.1	611,800	1.683		1.8[c]	5.404×10^3
38	Toluene	300	A	5.588×10^{-3}	MAO	7	1.25	ethylene-65 psi	norbornene-100 ml 2.2 M	50	0.5	12.3	812,600	1.711		0.3[c]	4.402×10^3
39	Toluene	300	A	5.588×10^{-3}	MAO	7	1.25	ethylene-65 psi	cis-1,4-hexadiene 100 ml	50	0.5	13.6	163,400	2.388		2.2[c]	4.868×10^3

[a]Compound A was preactivated by dissolving the compound in solvent containing MAO.
[b]Preincubation of activated compound A was for one day.
[c]Mole % comonomer.